

REMARKS

In the Office Action, Claims 1, 7, 8 are rejected under 35 U.S.C. § 102; and Claims 1-6 and 9-11 are rejected under 35 U.S.C. § 103. Claims 1 and 7 have been amended. Applicants believe that the rejections have been overcome in view of the amendments and for at least the reasons set forth below.

In the Office Action, Claim 1 has been rejected as allegedly anticipated in view U.S. Patent No. 5,534,366 and ("Hwang"). As previously provided, Claim 1 recites a battery pack that includes, in part, a battery block, a circuit block and an outer case that is capable of fitting in and housing the battery block and the circuit block, wherein the battery block and the circuit block can be independently removed and replaced from the outer case, and wherein an inside dimension of the outer case substantially equals a total outside dimension of the battery block and the circuit block. With this configuration, the battery block and the circuit block can be tightly fit inside of the outer case. This provides a nested structure where movement of the battery block and circuit block within the outer case can be effectively eliminated or at least greatly minimized. See, Specification, page 5, lines 22-25; and Figure 1.

Applicants believe that the Hwang reference is distinguishable from Claim 1. For example, nowhere does Hwang disclose or suggest an outer case with an inside dimension that is substantially equal to an outside dimension of the battery and circuit blocks as required by Claim 1 and as further illustrated, for example, in Fig. 1. Indeed, Hwang provides a housing 16 with a first pocket 20 for receiving a battery cell cartridge 12 and a receiving slot 22 for receiving a circuit cartridge 14. In this configuration, the battery cartridge 12 and the circuit cartridge 14 are placed in separately divided enclosures and on top of one another within the modular battery pack 10 as further provided in Hwang. See, Hwang, column 2 at line 58 to column 3 at line 2; and Fig. 1. Based on at least these differences, Applicants believe that Hwang and the subject matter as defined in Claim 1 are distinguishable and thus Hwang fails to anticipate Claim 1.

Accordingly, Applicants respectfully request that the anticipation rejection in view of Hwang is withdrawn.

In the Office Action, Claims 7 and 8 have been rejected as allegedly anticipated in view of U.S. Patent No. 5,818,198 ("Mito"). Of these claims, Claim 7 is the sole independent claim.

Claim 7 recites a battery pack that includes an outer case for housing one or more batteries and a circuit wherein a tab at both ends is connected to a cathode and anode of the battery and a central tab is connected through a midpoint lead, and wherein the inside of the outer case is completely separated into two chambers by a partition wall and the batteries and the circuit are separately housed in the two chambers.

As illustrated in the specification, tabs 48 which electrically connect the batteries 14 and the measurement/protection circuit 24 are provided through the lower partition wall 46 of the lower case 44. The tabs 48 at both ends are connected to the cathode and anode of the batteries 14 respectively, and the central tab 48 is connected to a midpoint lead 17. The midpoint lead 17 is, for example, provided in order to measure a potential between the two batteries 14. With this configuration, the intrusion of the electrolytes solution through the clearance between the lower partition wall 46 and the tabs 48 into the circuit chamber 43 can be prevented. Moreover, connection between the batteries and the measurement/protection circuit via the tabs can be readily performed. The tabs 48 can be provided on the upper portion wall 47. See, Specification, page 12 at line 29 to page 13 at line 9; and Fig. 7.

Applicants believe that the Mito reference is distinguishable from the claimed invention. For example, the battery pack 20 in Mito includes a base 21 for accepting a print wiring board 50 and a flexible board 51 that are placed on top of the battery cell assembly where five leads (e.g., 52a through 52e) extend from the flexible board 51 to the print wiring board 50 and further to the battery cell assembly. See, Mito, Col. 7 lines 21-37; and col. 6, lines 55-65; and Figure 5A. Based on at least these differences, Applicants believe that Mito is deficient with respect to at least a number of features as recited in Claim 7, and thus, Mito fails to anticipate Claim 7 and Claim 8 that depend from Claim 7. Accordingly, Applicants respectfully request that the anticipation rejection in view of Mito be withdrawn.

Claim 2 is rejected as allegedly obvious in view of Hwang and further in view of U.S. Patent No. 6,492,058 ("Watanabe"). Claim 2 depends from Claim 1 and thus as a matter of law incorporates each of the features of Claim 1.

Even if properly combinable Applicants believe that Hwang and Watanabe are distinguishable from Claim 2. At the outset, Hwang is deficient with respect to Claim 2 at least for substantially the same reasons as Hwang is deficient with respect to Claim 1 as discussed

above. Further, the Patent Office cannot rely solely on Watanabe to remedy the deficiencies of Hwang where Watanabe is merely relied on for its purported teachings regarding hermetical sealing. Therefore, Applicants believe that Hwang and Watanabe fail to render obvious Claim 2 based on at least these reasons.

Accordingly, Applicants respectfully request that the obviousness rejection in view of Hwang and Watanabe of Claim 2 be withdrawn.

In the Office Action, Claim 3 is rejected as allegedly obvious in view of Hwang and Watanabe and further in view of U.S. Patent No. 4,659,636 ("Suzuki"). Claim 3, like Claim 2, depends from Claim 1, and thus, Hwang and Watanabe are distinguishable from Claim 3 at least substantially the same reasons as discussed above. Further, the Patent Office cannot rely solely on Suzuki to remedy the deficiencies of Hwang and Watanabe where Suzuki is merely relied on for its alleged teaching regarding a structure that is formed by fitting together an open top lower package and an upper package having a groove corresponding to an opening of the lower package by press fitting. Therefore, Applicants believe that Hwang, Watanabe and Suzuki even if combinable fail to render obvious Claim 3, and thus, Applicants respectfully request that this rejection be withdrawn.

In the Office Action, Claims 1, 4, 5, and 6 are further rejected under 35 U.S.C. § 103. More specifically, Claims 1 and 4 are rejected in view of Watanabe and further view of Hwang; and Claims 5 and 6 are rejected in view of Watanabe, Hwang and further in view of U.S. Patent No. 6,387,567 ("Noh"). Of these claims, Claim 1 is the sole independent claim where Claims 4-6 depend from Claim 1 either directly or indirectly.

Even if properly combinable, Applicants believe that the cited art fails to disclose or suggest the claimed invention. As previously discussed, Claim 1 recites a battery pack that includes, in part, a battery block, a circuit block, and a outer case with an inside dimension that is substantially equal to a total outside dimension of the battery block and the circuit block such that the battery block and the circuit block can be tightly fit within the outer case to prevent movement of same within the outer case.

At a minimum, the Hwang reference fails to disclose or suggest this feature at least for substantially the same reasons as discussed above. Further, Watanabe is at least deficient with respect to same where Watanabe provides a rechargeable cell 2 and a protection circuit 3 that is

formed into a one package unit 9 and where the one package unit 9 is disposed between the insulating holder 6 and the rechargeable cell 2. See, Watanabe, for example, column 4 at lines 21-23; column 5 at lines 29-35; column 7 at lines 36-39; and Figs. 2 and 10. Thus, Hwang and Watanabe on their own are distinguishable from the claimed invention.

Further, the Patent Office cannot rely solely on the Noh reference to remedy the deficiencies of same. Indeed, Noh is relied on for its alleged teaching regarding creating a hermetic seal in which the terminals are insert molded. See, Office Action, page 6. Therefore, Applicants do not believe that one skilled in the art would be inclined to modify the cited art to arrive at the battery pack as claimed.

Accordingly, Applicants respectfully submit that the obviousness rejections in view of Hwang, Watanabe and Noh should be withdrawn based on at least these reasons.

In the Office Action, Claims 9-11 are rejected under 35 U.S.C. § 103 as allegedly unpatentable in view of Mito and Hwang. Each of Claims 9-11 depends from Claim 7 either directly or indirectly. Thus, Mito on its own is distinguishable from Claims 9-11 at least for substantially the same reasons as discussed above with respect to Claim 7.

Further, Applicants believe that Hwang cannot be relied on solely to remedy the deficiencies of Mito. At the outset, Applicants question whether one skilled in the art would combine Mito and Hwang in the first place. Even assuming that these references can be properly combined, Hwang at a minimum fails to disclose or suggest a tab at both ends that is connected to a cathode and an anode of the battery and a central tab that is connected to a midpoint lead as recited in Claim 7, let alone the additional features as further recited in Claims 9-11. Indeed, Hwang provides that the electrical connection between the circuit of the battery circuit cartridge and the housing circuit is made by engaging the battery cell contacts 30 and contact springs 32 where the electrical inner connection with the battery circuit and the circuit cartridge and the housing circuit is made by engaging the circuit contacts 36 and the circuit receiving contact 50. See, Hwang, column 6, at lines 27-34; and Fig. 2. Therefore, Applicants do not believe that one skilled in the art would be inclined to modify Mito in view of Hwang to arrive at the claimed invention based on at least these reasons.

Accordingly, Applicants respectfully submit that Hwang and Watanabe fail to render obvious Claims 9-11, and thus, Applicants respectfully request that this rejection be withdrawn in view of same.

For the foregoing reasons, Applicants respectfully submit that the present application is in condition for allowance and earnestly solicit reconsideration of same.

Respectfully submitted,

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